Fulfilling the Potential of Cancer Prevention and Early Detection

National Cancer Policy Board
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Editors

- “Imagine opening your morning paper and seeing the headline, ‘Interventions Succeed in Preventing 100,000 Cancer Cases and 60,000 Cancer Deaths Each Year.’ Reading further, you learn not only that lives have been saved from cancer, but also that remarkable gains had been made in reducing heart disease, diabetes and other major health threats. Such a promising headline is within reach because prevention interventions are available today that can sharply reduce the future burden of cancer and, at the same time, reduce the risk for other chronic diseases.”

National Cancer Policy Board

- Established in 1997
- Part of Institute of Medicine
- 20 members representing research, practice, and advocacy
- Funded by NCI, CDC, private sources

Purpose of NCPB

To address broad policy issues that affect cancer in the United States and to recommend ways to advance the Nation's effort against cancer.

Report Framework

- Focus on factors that are risks for common cancers and also have a large impact on the incidence of other major diseases

Chapters

- Reduction in cancer incidence and mortality achievable through shifts in distribution of modifiable risk factors in US population.
- Links between behavior and cancer
- Direct service and community approaches to behavior change

Chapters

- Principles of assessing effectiveness of screening & evidence for effectiveness of screening for major cancers
- Improving rates of participation in cancer screening programs
- Decision-making in face of uncertain science: Case study on lung cancer screening

Chapters

- Status of professional education and training in cancer prevention and early detection
- Selected federal programs that support cancer prevention and early detection
- Ongoing health services research

Reduction in cancer incidence and mortality

- Four models examined
  - Doll & Peto 1981; Willett,1996; NCI, 1986; Byers et al, 1999
- Focus on strength of association & biological latency
- Not address social or political latency to support behavior change

Reduction in cancer incidence and mortality

- Different methods, similar conclusions from Willette, 1996 & Byers et al, 1999
- About a one-third reduction in cancer mortality is feasible with the concerted application of current knowledge

Behavior-Cancer Links
Convincing Evidence

- Epidemiological findings across a large number of well-designed studies are consistent
- A dose-response relationship has been demonstrated
- Mechanisms are biologically plausible
- Laboratory evidence is supportive

Behavior-Cancer Links
Convincing Evidence

- Tobacco use increases
  - lung, oral, pharyngeal, laryngeal, esophageal, bladder, kidney pancreatic; colon, stomach, leukemia, cervical
- Physical activity decreases
  - colon; breast

Behavior-Cancer Links
Convincing Evidence

- Obesity increases
  - breast, endometrial, kidney, esophageal; colon
- Alcohol increases
  - mouth, pharynx, larynx, esophagus, liver; breast

Behavior Change Interventions

- Reviews evidence of effectiveness of interventions to promote
  - Nonsmoking
  - Healthy diet & weight loss
  - Physical activity
- Multi-level focus
  - Individual
  - Interpersonal
  - Organizational
  - Societal

Behavior Change Interventions

- Modest changes in a large segment of the population can result in meaningful reductions in cancer incidence and mortality
- Separate intervention models are not needed
  - common models emphasize skills, diverse & sustained interventions, social and other forms of support for maintenance

Behavior Change Interventions

- Two levels of interventions generally effective
  - well-defined interventions delivered to individuals
  - comprehensive, multi-channel programs delivered to large groups
- A number of effective behavioral interventions exist
  - There is no ‘magic bullet’

Screening Principles

- Burden of suffering
- Sensitivity and specificity of screening test
- Effectiveness of early detection
- Harms of screening
- Costs

Effectiveness of Screening

- Even with accurate screening tests, need to consider whether early detection improves outcomes for the screened population as a whole or for individuals who are found to have cancer

Effectiveness of Screening

- Consensus regarding screening for colorectal cancer, breast cancer, cervical cancer
- Rates are lower for proven screening (e.g., colorectal) than for screening without consensus (e.g., prostate)

Improving participation in screening

- Underscreening
  - eligible persons never screened or screened too infrequently
  - screening not done well
  - inadequate follow-up for abnormal results
- Overuse
  - widespread use of screening that's not recommended
  - performance of screening too often

Improving participation in screening

- Need to change:
  - systems of care, to make cancer screening available to eligible participants
  - health care providers, to perform screening on time and with skill
  - individuals, to obtain recommended tests and pursue follow-up

Adopting new technologies with uncertain science

- Spiral CT scanning example:
  - ? Promote without evidence of effectiveness
  - ? Public understand consequences of test
    - e.g., unwanted consequences of false positive
  - ? Conflict of interest when providers who promote it have financial stake in technology

Status of Professional Education & Training

- There is evidence of programmatic deficits in medical, dental, and nursing schools
- Substantial needs to upgrade skills of practicing clinicians
- System-wide approaches are needed
  - e.g., office systems that are conducive to meeting prevention needs during the course of regular patient care

Status of Professional Education & Training

- Possible solutions
  - require educational institutions to meet established curriculum guidelines
  - include CP/ED questions on boards
  - assure adequate CE opportunities
  - apply new learning technologies
  - assess adequacy of future supply of providers
  - research and demonstrations on most effective methods of training

Federal Programs that Support Cancer Prevention & Early Detection

- Involvement in 5 key areas
  - national objectives and guideline development
  - information dissemination
  - monitoring and surveillance
  - facilitation of statewide program planning and evaluation
  - provision of and payment for services

Federal Programs that Support Cancer Prevention & Early Detection

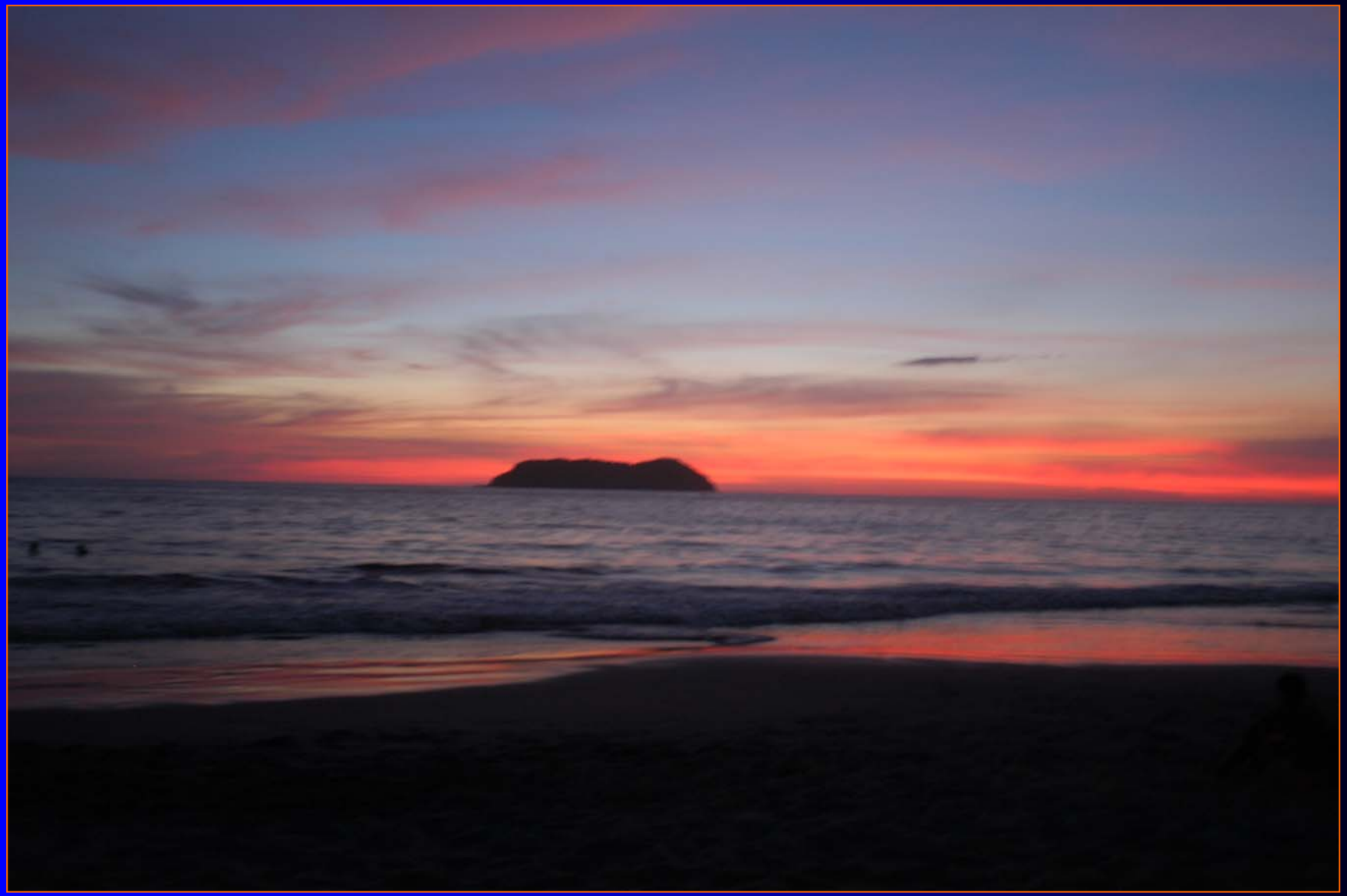
- Some programs are at the forefront of promoting effective cancer prevention and early detection
- Room for improvement in some areas, e.g.,:
  - coverage of evidence-based smoking cessation treatments
  - interventions to improve rates of screening

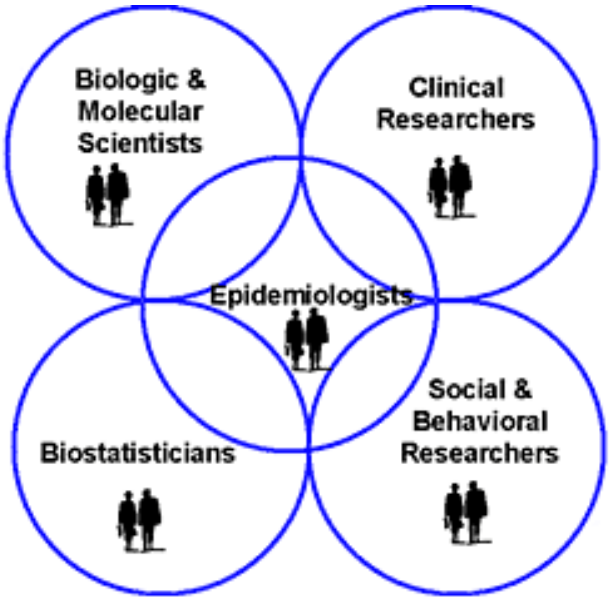
Research

- Articles on cancer prevention and control < 5% of all cancer-related citations
- Total research spending on cancer prevention and control ~ 12% at NCI, CDC

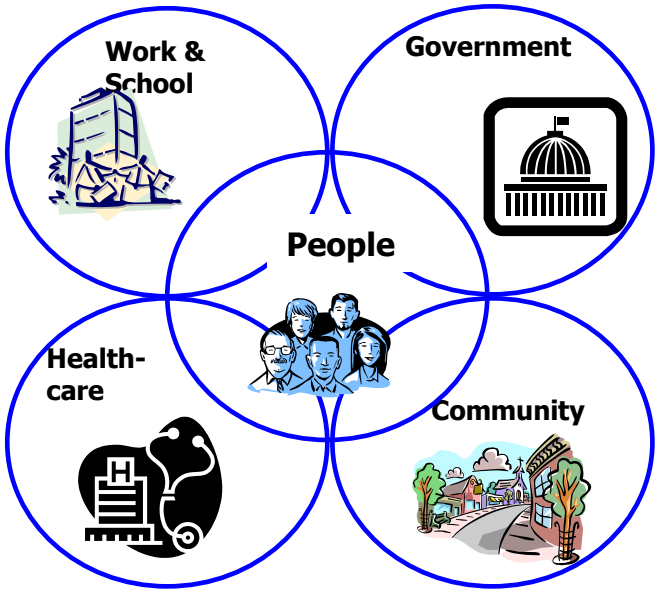
For more information

- NCPB Website www.iom.edu/ncpb
- NCPB phone 202 334-1382
- National Academy Press website www.nap.edu





Interdisciplinary Modern Epidemiology



Pubic Health Impact

Recommendation 1

The US Congress and state legislatures should enact and provide funding for enforcement of laws to substantially reduce and ultimately eliminate the adverse public health consequences of tobacco use and exposure.

Recommendation 2

A national strategy should be developed and coordinated by the US DHHS to address the epidemic of obesity, unhealthy diet, and physical inactivity in America, which are all significant risk factors for cancer and other diseases. Effective interventions need to be identified and broadly applied to reduce cancer risk among the general population and among populations at higher risk.

Recommendation 3

The US Congress should provide sufficient appropriations to the CDC to support innovative public and private partnerships to develop, implement, and evaluate comprehensive community-based programs in cancer prevention and early detection. Every state should have and implement a comprehensive cancer control plan.

Recommendation 4

Public and private insurers and providers should consider evidence-based cancer prevention and early detection services to be essential benefits and should provide coverage for them. These services at a minimum should include interventions recommended in the 2000 US PHS's clinical practice guideline on treating tobacco use and dependence, screening for breast cancer among women age 50 and older, screening for cervical cancer among all sexually active women with an intact cervix, and screening for colorectal cancer among adults age 50 and older.

Recommendation 5

The US Congress should increase support for programs that provide primary care to uninsured and low-income people (e.g., Community and Migrant Health Centers and family planning programs of Title X of the PHS Act). These programs increase the use of cancer prevention and early detection services among medically underserved populations.

Recommendation 6

Support for the CDC's National Breast and Cervical Cancer Early Detection Program should be increased so that the program can reach all uninsured women using innovative delivery strategies. Support is also needed for a similar program at the CDC to provide screening for colorectal cancer for uninsured and low-income men and women.

Recommendation 7

The US DHHS should complete a comprehensive review to assess whether evidence-based prevention services are being offered and successfully delivered in federal health programs.

Recommendation 8

Programs are needed for health care providers to improve their education and training, monitor their adherence to evidence-based guidelines, and enhance their practice environments to support their provision of cancer prevention and early detection services.

Recommendation 9

The U.S. Congress should provide sufficient support to the US DHHS for the US Preventive Services Task Force and the US Task Force on Community Preventive Services to conduct timely assessments of the benefits, harms, and costs associated with screening tests and other preventive interventions. Summaries of recommendations should be made widely available to the public, health care providers, and state and local public health officials and policy makers.

Recommendation 10

Public and private organizations (e.g., the NCI, the ACS) should take steps to improve the public's understanding of cancer prevention and early detection with a focus on promoting healthy lifestyles and informed decision making about health behaviors and cancer screening.

Recommendation 11

Public and private initiatives to reduce disparities in the cancer burden (e.g., initiatives of the NCI and the ACS) should be supported.

Recommendation 12

Public and private sponsors of research including the NIH, AHRQ, CDC, CMS, DoD, and ACS should expand their support of applied behavioral research and how best to disseminate evidence-based prevention interventions. Effective strategies are especially needed to encourage healthy behaviors among children and their families, medically underserved populations, and the public at large through multicomponent interventions.